

REMARKS

Claims 1-11 were pending in this application when the present Final Office Action was mailed (September 21, 2006), with claims 8 and 10 withdrawn from consideration. In this response, claim 1 has been amended, and claims 46-52 have been added. Accordingly, claims 1-11 and 46-52 are currently pending.

In the September 21, 2006 Final Office Action, claims 1-7, 9, and 11 were rejected. More specifically, the status of the application in light of this Final Office Action is as follows:

(A) Figure 4A was objected to for allegedly having informalities;

(B) Claims 1-7, 9, and 11 stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,841,863 to Baik et al. ("Baik"); and

(C) Claims 1-7, 9, and 11 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,043,430 to Chun ("Chun").

As a preliminary matter, the undersigned attorney wishes to thank the Examiner for engaging in a telephone interview on December 12, 2006. During the telephone interview, the Examiner and the undersigned attorney discussed the claimed invention and the teachings in Baik and Chun. The Examiner provisionally agreed that Baik does not support Section 102 rejections of the pending claims, and the pending claims with the foregoing amendments patentably distinguish over Chun. The following remarks reflect the foregoing discussion and expand upon the points discussed during the December 12 telephone interview. As a result, the applicants request that this paper also constitute the applicants' Interview Summary. If the Examiner notices any deficiencies in this regard, the Examiner is encouraged to contact the undersigned attorney.

A. Response to the Objection to the Drawings

Figure 4A was objected to for allegedly having informalities. Figure 4A has been amended to address the Examiner's concern. As a result, the objection to drawing Figure 4A should be withdrawn.

B. Response to the Section 102(e) Rejection on the Basis of Baik

Claims 1-7, 9, and 11 were rejected under 35 U.S.C. § 102(e) as being anticipated by Baik. The applicants respectfully traverse these rejections. For the reasons discussed below, Baik does not support a Section 102 rejection of these claims.

Claim 1 is directed to a microfeature device package system that includes a microfeature device, a plurality of device contacts electrically coupled to structures within the microfeature device, and a conductive structure electrically connected to at least one of the plurality of device contacts. The conductive structure has a plurality of first and second package contacts accessible for electrical coupling to at least one device external to the package. The first package contacts are accessible from a first direction for coupling and the second package contacts are configured to receive solder balls and are accessible from a second direction for coupling. The second direction is opposite the first direction. The package system also includes an encapsulant disposed adjacent to the microfeature device and the conductive structure. The encapsulant has apertures with aperture walls aligned with the second package contacts and containing solder balls carried by the second package contacts. The encapsulant is positioned against the conductive structure proximate to the first package contacts. The package further includes individual volumes of solder positioned at individual first package contacts.

Baik discloses a ball grid array package with first and second stacked center pad chips. (Abstract). The semiconductor chips 102, 104 are glued on the upper and lower circuit boards 112, 122, respectively. (Column 4, lines 63-65). The upper and lower circuit boards 112, 122 are joined together with bumps 140. (Column 5, lines 1-3). The upper circuit board 112 and the chip 104 are completed included in a mold 150. (Column 5, lines 3-5). The lower circuit board 122 is partially exposed to the lower portion of the mold 150 to carry solder balls 160. (Column 5, lines 5-9).

Pursuant to the agreement reached during the December 12 telephone interview, Baik does not support a Section 102 rejection of claim 1 because Baik fails to disclose several features of these claims. For example, Baik does not disclose "the conductive structure having a plurality of first and second package contacts accessible for electrical coupling to at least one device external to the package." Instead, Baik's upper circuit board 112 is completely inside the mold

150 and is not accessible for electrical coupling to at least one device external to the package. As a result, the Section 102 rejection of claim 1 based on Baik should be withdrawn. Claims 2-7, 9, and 11 depend from claim 1. As a result, Baik does not support Section 102 rejections of claims 2-7, 9, and 11 for the reasons discussed above and for the additional features of these claims.

C. Response to the Section 102(b) Rejection on the Basis of Chun

Claims 1-7, 9, and 11 were rejected under 35 U.S.C. § 102(b) as being anticipated by Chun. Without commenting on or conceding the merits of the Examiner's position, claim 1 has been amended to further clarify the claimed subject matter. For the reasons discussed below, Chun does not support a Section 102 rejection of these claims.

Chun discloses a package having exposed upper and lower lead surfaces for stacking several packages. (Abstract). The package includes a semiconductor chip 21, a plurality of upwardly bent lower leads 23, and a plurality of upper leads 23'. (Column 3, lines 1-5). During stacking, the upper leads 23' contact upper surfaces of the upwardly bent portions of the lower leads 23. (Column 3, lines 5-7). The upper and lower surfaces of the upper and lower leads 23, 23' are externally exposed. (Column 3, lines 10-13).

Pursuant to the agreement reached during the December 12 telephone interview, Chun does not support a Section 102 rejection of claim 1 because Chun fails to disclose several features of claim 1. For example, Chun does not disclose "the encapsulant having apertures with aperture walls aligned with the second package contacts and containing solder balls carried by the second package contacts." Assuming, for the sake of argument, (with reference to Chun's Figure 7) that the space in the resin 25 occupied by Chun's upper leads 23 or lower leads 23' corresponds, at least in part, to the encapsulant apertures of claim 1, this space does not contain solder balls. Instead, the upper leads 23 and the lower leads 23' completely occupy the space within the resin 25, leaving no room for solder. Accordingly, Chun's solder 29 is positioned entirely external to the resin 25 and no aperture walls "contain solder balls," as included in claim 1. As a result, the Section 102 rejection of claim 1 based on Chun should be withdrawn. Claims 2-7, 9, and 11 depend from claim 1. As a result, Chun does not support Section 102 rejections of

claims 2-7, 9, and 11 for the reasons discussed above and for the additional features of these claims.

D. Newly Added Claims

Claims 46-52 have been added in this response. The applicants respectfully submit that these claims are patentable over the cited references for including features not disclosed or suggested in the cited references. For example, neither Baik nor Chun disclose "the encapsulant having apertures aligned with the second package contacts and having aperture walls extending outwardly from the contact surfaces of the second package contacts" of claim 46 and a microelectronic device package having "a plurality of openings aligned with the second package contacts" of claim 50.

E. Conclusion

In view of the foregoing, the claims pending in the application comply with the requirements of 35 U.S.C. § 112 and patentably define over the applied art. A Notice of Allowance is, therefore, respectfully requested. If the Examiner has any questions or believes a telephone conference would expedite prosecution of this application, the Examiner is encouraged to call the undersigned representative at (206) 359-6038.

Respectfully submitted,

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